ADDENDUM TO

DESIGN REPORT FOR GAS CONTROL FACILITIES *

AUGUST 11, 1975

1. Introduction

On August 8, 1975, representatives of SCS Engineers and the Los Angeles County Engineer, Project Planning and Pollution Control Division (PPPC), reviewed the "Construction Plans for Gas Control Facilities, South Bay Six Drive-In Theatre," dated August 7, 1975, and the "Design Report for Gas Control Facilities," including Addendum dated August 4, 1975. All resulting modifications to the "Construction Plans..." have been incorporated in the revised plan dated August 8, 1975. In addition, several additions/revisions to the design report were specified as necessary:

- A discussion of the possibility of fire in the refuse due to the surface vents.
- A discussion of the effect of mudjacking upon the proposed gas control system to be located beneath the concession building.
- A revision of the proposed post-construction monitoring program.

In addition, a system is proposed to automatically monitor methane concentrations in a representative group of surface vents.

2. Possibility of Fire in Landfill

As a result of the negative pressure gas migration control system, small quantities of air may be drawn into the landfill through the surface vents. All landfill gas extraction systems presently being installed or utilized for either migration control or methane recovery from refuse fills have this characteristic. However, as long as there is a layer of non-combustible material through which the air must flow before reaching the landfill materials, and this layer is sufficiently fine to act as a flame arrestor, it is not possible to obtain ignition of the landfill material from the surface via these vents. The gravel and zeolite contained in the gravel vents are sufficiently fine to operate as flame arrestors. The zeolite will have a 1/8" particle size.

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* Addendum to "Design Report for Gas Control Facilities," dated June 25, 1975, prepared by SCS Engineers.

provide for positive removal and destruction of the gas that is presently in the landfill as opposed to the passive vent system previously proposed. This addendum describes the techniques proposed for removing and destroying the landfill gas as it is being generated within the fill material. The basic system consists of a series of extraction wells and a suction blower with a flare system for destruction. Wells will be used to remove the landfill gas as it is being generated. The flare system will result in the ultimate destruction of this gas. Products of this destruction will be the normal combustion products of water vapor and carbon dioxide, and trace amounts of sulfur dioxide. From the air pollution standpoint, the total amount of sulfur dioxide is totally insignificant and the actual emission rate will meet all applicable air pollution standards.

The modified system for gas removal will theoretically reduce the need for protection under the concession building and the need for off-site migration controls. Rather than reduce specifications on the existing system, however, it is further proposed to leave the existing building protection and off-site migration systems as originally designed. This will have the net effect of significantly increasing the safety factor in the design of the concession building and off-site gas control systems.

2.0 - Extraction Well System Design

The proposed extraction well system design is quite similar to the design employed for extracting landfill gas for energy recovery purposes. Our objectives are to remove the gas from the landfill and to destroy this gas. The difference in objectives between an energy recovery system and a removal system will result in slightly different design procedures. In the case of recovery well installation, it is desired to extract the gas with as high a methane content as possible. It is also desired to minimize the total cost of the extraction system. These two objectives dictate that relatively low pumping rates per well will be used in a methane recovery system. In a methane recovery system design, extreme care must be exercized to prevent over-drawing a well and withdrawing air down from the surface. The air coming from the surface will kill the anaerobic bacteria and stop the methane production and dilute the gas.

Since our objective is the removal of the methane, without recovery, the proposed system is designed for a higher extraction rate than would be utilized for a recovery system. This will create a slightly over withdrawn condition in the landfill area and have a tendancy to reduce the methane generation rate, but will allow for 100% extraction of the methane.